

REMARKS

In the final Office Action, the Examiner rejected claims 1-7, 12-19, 21, 22, 24-32 and 43 under 35 U.S.C. § 103(a) as being unpatentable over Shanahan et al. (U.S. Patent No. 6,820,075) in view of Fernley et al. (U.S. Patent Application Publication No. 2002/0174101); rejected claim 41 under 35 U.S.C. § 103(a) as being unpatentable over Shanahan et al. in view of Veale (U.S. Patent No. 6,584,470); rejected claim 44 under 35 U.S.C. § 103(a) as being unpatentable over Shanahan et al. in view of Veale and Fernley et al.; and rejected claims 9-11 under 35 U.S.C. § 103(a) as being unpatentable over Shanahan et al. in view of Fernley et al. and Risvik (U.S. Patent No. 6,377,945).

Applicants respectfully traverse the Examiner's rejections under 35 U.S.C. § 103. Claims 1-7, 9-19, 21, 22, 24-32, 41, 43, and 44 remain pending in this application.

*REJECTION UNDER 35 U.S.C. § 103(a) BASED ON
SHANAHAN ET AL. AND FERNLEY ET AL.*

In paragraph 4 of the final Office Action, the Examiner rejected claims 1-7, 12-19, 21, 22, 24-32, and 43 under 35 U.S.C. § 103(a) as allegedly unpatentable over Shanahan et al. in view of Fernley et al. Applicants respectfully traverse the rejection.

Independent claim 1, for example, is directed to a method that comprises obtaining a text fragment; performing a search, based, at least in part, on the text fragment, to identify one or more documents; identifying sentences within the one or more documents that include the text fragment; determining sentence endings as text that is located within the identified sentences between the text fragment and an end of the identified sentences; assigning scores to the sentence endings based, at least in part, on a location within the identified sentences at which the text

fragment occurs; and presenting the sentence endings as potential completions for the text fragment based, at least in part, on the scores.

Shanahan et al. and Fernley et al., whether taken alone or in any reasonable combination, do not disclose or suggest the combination of features recited in claim 1. For example, Shanahan et al. and Fernley et al. do not disclose or suggest assigning scores to sentence endings, which include text that is located within identified sentences between a text fragment and an end of the identified sentences, based, at least in part, on a location within the identified sentences at which the text fragment occurs, as recited in claim 1.

The Examiner admitted that Shanahan et al. does not disclose or suggest these features (final Office Action, pages 3-4). The Examiner alleged, however, that Fernley et al. discloses these features of claim 1, and cited Fig. 2 and paragraphs 0056, 0068, 0075, and 0076, of Fernley et al. for support (final Office Action, page 4). Applicants submit that the disclosure of Fernley et al. provides no support for the Examiner's allegation.

With regard to Fig. 2, Fernley et al. discloses that words in a query phrase are weighted based on the words' relative position within the query phrase (para. 0070) and that words in a document are weighted based on the words' relative position within the document (para. 0075). Fernley et al. discloses that the weights of corresponding words are multiplied and then added together to provide a total positional weight sum for each document (para. 0076). Nowhere in connection with Fig. 2, or elsewhere, does Fernley et al. disclose or suggest assigning scores to sentence endings that include text that is located within identified sentences between a text fragment and an end of the identified sentences, as recited in claim 1.

Rather, Fernley et al. discloses assigning a weight to a word in a query phrase based on the word's position within the query phrase and assigning a weight to a word in a document based on the word's position within the document (paras. 0070 and 0075). Fernley et al. does not disclose or suggest that these words are sentence endings that include text that is located within identified sentences between a text fragment and an end of the identified sentences. Thus, Fernley et al. does not disclose or suggest assigning scores to sentence endings, which include text that is located within identified sentences between a text fragment and an end of the identified sentences, based, at least in part, on a location within the identified sentences at which the text fragment occurs, as recited in claim 1.

Even assuming, for the sake of argument, that the words within the query phrase and/or within a document can reasonably be equated to sentence endings (points that Applicants do not concede for at least the reasons given above), Fernley et al. does not disclose or suggest that weights are assigned to the words based, at least in part, on a location within identified sentences at which a text fragment occurs. Rather, Fernley et al. discloses assigning a weight to a word in a query phrase based on the word's position within the query phrase and assigning a weight to a word in a document based on the word's position within the document (paras. 0070 and 0075). Thus, Fernley et al. does not disclose or suggest assigning scores to sentence endings, which include text that is located within identified sentences between a text fragment and an end of the identified sentences, based, at least in part, on a location within the identified sentences at which the text fragment occurs, as recited in claim 1.

At paragraph 0056, Fernley et al. discloses:

During information retrieval, the relevance of a document is calculated by multiplying together the weight of a query keyword and the weight of the corresponding document

keyword. Where more than one keyword is used, the results of the multiplication are summed together to provide a total measure of the relevance of the document.

In this section, Fernley et al. discloses that the relevance of a document is calculated by multiplying the weight of a query keyword with the weight of a corresponding document keyword. Nowhere in this section, or elsewhere, does Fernley et al. disclose or suggest assigning scores to sentence endings, let alone assigning scores to sentence endings, which include text that is located within identified sentences between a text fragment and an end of the identified sentences, based, at least in part, on a location within the identified sentences at which the text fragment occurs, as recited in claim 1.

At paragraph 0068, Fernley et al. discloses:

The query 'Who pursues Microsoft?' will produce the same relevance ranking for both documents using a 'bag of words' system. Referring to the broken lines of FIG. 2, the two documents are represented as document nodes. The relevance of document d1 is determined in terms of keyword occurrence by multiplying the relevance weighting of each word of the query (i.e. query keywords) with the relevance weighting of each word of the document. In this case the query keywords 'pursues' and 'Microsoft' have relevance weightings of 0.7 and the query keyword 'who' has a relevance weighting of 0.1. The total sum of the relevance weightings for each document is determined, the sum in each case being 0.98. The system fails to identify which of the documents is most relevant to the query, because the relative positions of the words within the phrases are not taken into account.

In this section, Fernley et al. discloses that the relevance of a document is calculated by multiplying the relevance weight of each word of a query with the relevance weight of each word of a document. Nowhere in this section, or elsewhere, does Fernley et al. disclose or suggest assigning scores to sentence endings, let alone assigning scores to sentence endings, which include text that is located within identified sentences between a text fragment and an end of the identified sentences, based, at least in part, on a location within the identified sentences at which the text fragment occurs, as recited in claim 1.

At paragraphs 0075-0076, Fernley et al. discloses:

Each word of the document is given a weighting determined by its relative position in the document, in the same way as the query phrase.

The query keywords are compared with the documents, the weightings of corresponding words being multiplied and then added together to provide a total positional weight sum for each document. Referring to FIG. 2, the total positional weight sum for document d1 is 0.77 whereas the total positional weight sum for document d2 is 0.28. Document d1 has a greater total positional weight sum because the word 'Microsoft' occurs later in that document, and is consequently given a higher weighting which in turn is multiplied by the high weighting given to the word 'Microsoft' in the query phrase.

In these sections, Fernley et al. discloses that a total positional weight sum for a document is computed by multiplying the weightings of words and then adding them together. Nowhere in these sections, or elsewhere, does Fernley et al. disclose or suggest assigning scores to sentence endings, let alone assigning scores to sentence endings, which include text that is located within identified sentences between a text fragment and an end of the identified sentences, based, at least in part, on a location within the identified sentences at which the text fragment occurs, as recited in claim 1.

For at least these reasons, Applicants submit that claim 1 is patentable over Shanahan et al. and Fernley et al., whether taken alone or in any reasonable combination. Claims 2-7, 12-19, 21, 22, and 24-29 depend from claim 1 and are, therefore, patentable over Shanahan et al. and Fernley et al. for at least the reasons given with regard to claim 1.

Independent claim 30 is directed to a system that comprises means for receiving a text fragment; means for identifying documents that include the text fragment; means for locating sentences within the documents that include at least some of the text fragment; means for identifying sentence endings associated with the located sentences; means for assigning scores to the sentence endings based, at least in part, on a measure of popularity associated with the

sentence endings; and means for presenting the sentence endings as potential completions for the text fragment based, at least in part, on the scores.

Shanahan et al. and Fernley et al., whether taken alone or in any reasonable combination, do not disclose or suggest the combination of features recited in claim 30. For example, Shanahan et al. and Fernley et al. do not disclose or suggest means for assigning scores to sentence endings, associated with located sentences within documents that include at least some of a text fragment, based, at least in part, on a measure of popularity associated with the sentence endings, as recited in claim 30.

The Examiner admitted that Shanahan et al. does not disclose or suggest these features (final Office Action, page 14). The Examiner alleged, however, that Fernley et al. discloses these features of claim 30, and cited Fig. 2 and paragraphs 0047 and 0055, of Fernley et al. for support (final Office Action, page 14). Applicants submit that the disclosure of Fernley et al. provides no support for the Examiner's allegation.

With regard to Fig. 2, Fernley et al. discloses that words in a query phrase are weighted based on the words' relative position within the query phrase (para. 0070) and that words in a document are weighted based on the words' relative position within the document (para. 0075). Fernley et al. discloses that the weights of corresponding words are multiplied and then added together to provide a total positional weight sum for each document (para. 0076). Nowhere in connection with Fig. 2, or elsewhere, does Fernley et al. disclose or suggest means for assigning scores to sentence endings, associated with located sentences within documents that include at least some of a text fragment, based, at least in part, on a measure of popularity associated with the sentence endings, as recited in claim 30.

Rather, Fernley et al. discloses assigning a weight to a word in a query phrase based on the word's position within the query phrase and assigning a weight to a word in a document based on the word's position within the document (paras. 0070 and 0075). Fernley et al. does not disclose or suggest that these words are sentence endings associated with located sentences within documents that include at least some of a text fragment. Thus, Fernley et al. does not disclose or suggest means for assigning scores to sentence endings, associated with located sentences within documents that include at least some of a text fragment, based, at least in part, on a measure of popularity associated with the sentence endings, as recited in claim 30.

Even assuming, for the sake of argument, that the words within the query phrase and/or within a document can reasonably be equated to sentence endings (points that Applicants do not concede for at least the reasons given above), Fernley et al. does not disclose or suggest that weights are assigned to the words based, at least in part, on a measure of popularity associated with the words. Rather, Fernley et al. discloses assigning a weight to a word in a query phrase based on the word's position within the query phrase and assigning a weight to a word in a document based on the word's position within the document (paras. 0070 and 0075). Thus, Fernley et al. does not disclose or suggest means for assigning scores to sentence endings, associated with located sentences within documents that include at least some of a text fragment, based, at least in part, on a measure of popularity associated with the sentence endings, as recited in claim 30.

At paragraph 0047, Fernley et al. discloses:

Preferably, each document keyword within the document signature phrase is given a relevance weighting dependent upon the number of times it occurs in the group of sentences.

In this section, Fernley et al. discloses that a document keyword is given a relevance weighting dependent on the number of times that the keyword occurs in a group of sentences. Nowhere in this section, or elsewhere, does Fernley et al. disclose or suggest that a document keyword is a sentence ending associated with a located sentence within documents that include at least some of a text fragment. Rather, Fernley et al. simply discloses a relevance weighting that depends on the number of times that a keyword occurs in a group of sentences. Thus, Fernley et al. does not disclose or suggest means for assigning scores to sentence endings, associated with located sentences within documents that include at least some of a text fragment, based, at least in part, on a measure of popularity associated with the sentence endings, as recited in claim 30.

At paragraph 0055, Fernley et al. discloses:

The document retrieval system shown in FIG. 1 comprises a weighted network of query keywords and document nodes representative of documents. Each document node comprises a set of document keywords indicative of the content of a document.

In this section, Fernley et al. discloses a weighted network of query keywords and document nodes representative of documents. Nowhere in this section, or elsewhere, does Fernley et al. disclose or suggest sentence endings that are associated with located sentences within documents that include at least some of a text fragment. Thus, Fernley et al. does not disclose or suggest means for assigning scores to sentence endings, associated with located sentences within documents that include at least some of a text fragment, based, at least in part, on a measure of popularity associated with the sentence endings, as recited in claim 30.

For at least these reasons, Applicants submit that claim 30 is patentable over Shanahan et al. and Fernley et al., whether taken alone or in any reasonable combination.

Independent claim 31 is directed to a system that comprises one or more servers configured to receive a text fragment, identify documents that include at least a portion of the

text fragment, locate sentences within the documents that are associated with the text fragment, determine sentence completions associated with the located sentences, trim one of the sentence completions by dropping one or more words from the one of the sentence completions, and provide a plurality of the sentence completions including the trimmed sentence completion as potential completions for the text fragment.

Initially, Applicants note that the Examiner rejected claim 31 based on a combination of Shanahan et al. and Fernley et al. In the body of the rejection, however, the Examiner appears to allege that Shanahan et al. anticipates claim 31, by alleging that Shanahan et al. discloses all of the features of claim 31 (final Office Action, pages 14-15). The Examiner did not rely on any portion of Fernley et al. and did not provide any reason for combining the disclosures of Shanahan et al. and Fernley et al. Thus, the Examiner did not establish a prima facie case of obviousness under 35 U.S.C. § 103.

Nevertheless, Shanahan et al. and Fernley et al., whether taken alone or in any reasonable combination, do not disclose or suggest the combination of features recited in claim 31. For example, Shanahan et al. and Fernley et al. do not disclose or suggest one or more servers that are configured to trim one of the sentence completions, associated with located sentences within documents that are associated with a text fragment, by dropping one or more words from the one of the sentence completions, as recited in claim 31.

The Examiner alleged that Shanahan et al. discloses trimming at least one sentence ending by dropping one or more words from the at least one sentence ending and cited column 60, lines 41-57, and column 57, lines 60-62, of Shanahan et al. for support (final Office Action,

page 15). Applicants submit that the disclosure of Shanahan et al. provides no support for the Examiner's allegation.

At column 60, lines 41-57, Shanahan et al. discloses:

Note that the entry or entries offered to the user may be one word, a phrase, all words until the end of a sentence, all words until the end of a paragraph, or some other grouping of words.

An alternate embodiment of presenting suggested completions of the entity fragment is to provide snippets/segments of the document from where the suggested completions were extracted using the origin information associated with each indexed entity in the auto-completion database possibly in a separate sub-window. These snippets/segments can be presented in their original format recorded in the auto-completion database or in more standard format such as the format of the target document. Furthermore, the first word/phrase match is displayed with additional emphasis. The first word/phrase match can be displayed with additional emphasis (e.g., highlighted) to indicate that it is being offered for user acceptance.

In this section, Shanahan et al. discloses that entries offered to the user may be a single word, all words to the end of a sentence, or all words to the end of a paragraph. Shanahan et al. also discloses that snippets/segments of the document from where the suggested completions were extracted can be provided in a separate sub-window. Nowhere in this section, or elsewhere, does Shanahan et al. disclose or remotely suggest trimming a sentence completion. Rather, Shanahan et al. merely discloses providing context for a completion of an entity fragment by providing a snippet/segment of the document from which the completion was extracted. Thus, Shanahan et al. does not disclose or suggest one or more servers that are configured to trim a sentence completion by dropping one or more words from the sentence completion, as recited in claim 31.

At column 57, lines 60-62, Shanahan et al. discloses "[c]onsequently, words/phrases that occur very rarely may ignored by the auto-completion system." This section of Shanahan et al. simply discloses that the auto-completion system can ignore words and phrases that rarely occur, and omit these words and phrases from the auto-completion entity database (col. 57, lines 43-

49). Nowhere in this section, or elsewhere, does Shanahan et al. disclose or remotely suggest trimming a sentence completion. Rather, Shanahan et al. merely discloses omitting rare words and phrases from an auto-completion entity database. Thus, Shanahan et al. does not disclose or suggest one or more servers that are configured to trim a sentence completion by dropping one or more words from the sentence completion, as recited in claim 31.

The Examiner alleged that "cutting to a phrase completion from sentence require dropping" (final Office Action, page 15). The Examiner appears to be alleging that Shanahan et al. discloses determining sentence completions and then cutting these sentence completions to phrase completions. There is absolutely no support for this allegation in the disclosure of Shanahan et al. Rather, Shanahan et al. simply discloses that entries offered to the user may be a single word, all words to the end of a sentence, or all words to the end of a paragraph (col. 60, lines 41-44). There is absolutely no disclosure in Shanahan et al. that discloses or suggests that Shanahan et al. first starts by determining all words to the end of a sentence, then cutting these down to single words and phrases, as the Examiner appears to be alleging. Thus, the Examiner's allegation lacks merit.

Fernley et al. also does not disclose or suggest one or more servers that are configured to trim a sentence completion by dropping one or more words from the sentence completion, as recited in claim 31.

For at least these reasons, Applicants submit that claim 31 is patentable over Shanahan et al. and Fernley et al., whether taken alone or in any reasonable combination. Claims 32 and 43 depend from claim 31 and are, therefore, patentable over Shanahan et al. and Fernley et al. for at least the reasons given with regard to claim 31.

Accordingly, Applicants request the reconsideration and withdrawal of the rejection of claims 1-7, 12-19, 21, 22, 24-32 and 43 under 35 U.S.C. § 103 based on Shanahan et al. and Fernley et al.

*REJECTION UNDER 35 U.S.C. § 103(a) BASED ON
SHANAHAN ET AL. AND VEALE*

In paragraph 5 of the final Office Action, the Examiner rejected claim 41 under 35 U.S.C. § 103(a) as allegedly unpatentable over Shanahan et al. in view of Veale. Applicants respectfully traverse the rejection.

Independent claim 41 is directed to a computer device that comprises a memory configured to store instructions; and a processor configured to execute the instructions in the memory to obtain a fragment of text, search for documents that include at least a portion of the fragment of text, identify sentences within the documents that include the at least the portion of the fragment of text, determine sentence completions as text located within the identified sentences between the at least the portion of the fragment of text and an end of the identified sentences, merge at least two of the sentence completions to form a single merged sentence completion, and provide a plurality of the sentence completions, including the merged sentence completion, as potential completions for the fragment of text.

Shanahan et al. and Veale, whether taken alone or in any reasonable combination, do not disclose or suggest the combination of features recited in claim 41. For example, Shanahan et al. does not disclose or suggest a processor that is configured to merge at least two sentence completions, associated with identified sentences within documents that include at least a portion of a fragment of text, to form a single merged sentence completion, as recited in claim 41.

The Examiner admitted that Shanahan et al. does not disclose or suggest these features (final Office Action, page 18). The Examiner alleged, however, that Veale discloses these features of claim 41, and cited column 21, line 35 - column 22, line 7, of Veale for support (final Office Action, page 18). Applicants submit that the disclosure of Veale provides no support for the Examiner's allegation.

At column 21, line 35 - column 22, line 7, Veale discloses that a composite answer is produced by combining answer fragments into a single answer. Veale discloses combining multiple, partial answers to form a more complete single answer (col. 22, lines 60-62). Veale provides an example of a composite answer as "[May 21] Cherie Blair, wife of prime minister Tony Blair, gave birth to a boy, Leo, today at St. Alban's Mercy hospital in London," which is a combination of the answer fragment "May 21" and the answer fragment "Cherie Blair, wife of prime minister Tony Blair, gave birth to a boy, Leo, today at St. Alban's Mercy hospital in London" (col. 22, lines 1-7). Veale does not disclose or suggest sentence completions that include text located within identified sentences between at least a portion of a fragment of text and an end of the identified sentences. Rather, Veale discloses composite answers constructed from multiple partial answers. Thus, Veale does not disclose or suggest a processor that is configured to merge at least two sentence completions, associated with identified sentences within documents that include at least a portion of a fragment of text, to form a single merged sentence completion, as recited in claim 41.

For at least these reasons, Applicants submit that claim 41 is patentable over Shanahan et al. and Veale, whether taken alone or in any reasonable combination.

Accordingly, Applicants request the reconsideration and withdrawal of the rejection of claim 41 under 35 U.S.C. § 103 based on Shanahan et al. and Veale.

*REJECTION UNDER 35 U.S.C. § 103(a) BASED ON
SHANAHAN ET AL., VEALE, AND FERNLEY ET AL.*

In paragraph 6 of the final Office Action, the Examiner rejected claim 44 under 35 U.S.C. § 103(a) as allegedly unpatentable over Shanahan et al. in view of Veale and Fernley et al. Applicants respectfully traverse the rejection.

Claim 44 depends from claim 41. Without acquiescing in the Examiner's rejection with regard to claim 44, Applicants submit that the disclosure of Fernley et al. does not cure the deficiencies in the disclosures of Shanahan et al. and Veale identified above with regard to claim 41. Therefore, claim 44 is patentable over Shanahan et al., Veale, and Fernley et al., whether taken alone or in any reasonable combination, for at least the reasons given with regard to claim 41.

Accordingly, Applicants request the reconsideration and withdrawal of the rejection of claim 44 under 35 U.S.C. § 103 based on Shanahan et al., Veale, and Fernley et al.

*REJECTION UNDER 35 U.S.C. § 103(a) BASED ON
SHANAHAN ET AL., FERNLEY ET AL., AND RISVIK*

In paragraph 7 of the final Office Action, the Examiner rejected claims 9-11 under 35 U.S.C. § 103(a) as allegedly unpatentable over Shanahan et al. in view of Fernley et al. and Risvik. Applicants respectfully traverse the rejection.

Claims 9-11 depend from claim 1. Without acquiescing in the Examiner's rejection with regard to claims 9-11, Applicants submit that the disclosure of Risvik does not cure the deficiencies in the disclosures of Shanahan et al. and Fernley et al. identified above with regard

to claim 1. Therefore, claims 9-11 are patentable over Shanahan et al., Fernley et al., and Risvik, whether taken alone or in any reasonable combination, for at least the reasons given with regard to claim 1.

Accordingly, Applicants request the reconsideration and withdrawal of the rejection of claims 9-11 under 35 U.S.C. § 103 based on Shanahan et al., Fernley et al., and Risvik.

CONCLUSION

In view of the foregoing remarks, Applicants respectfully request the Examiner's reconsideration of the application and the timely allowance of claims 1-7, 9-19, 21, 22, 24-32, 41, 43, and 44.

As Applicants' remarks with respect to the Examiner's rejections overcome the rejections, Applicants' silence as to certain assertions by the Examiner in the Office Action or certain requirements that may be applicable to such rejections (e.g., whether a reference constitutes prior art, reasons for modifying a reference and/or combining references, assertions as to dependent claims, etc.) is not a concession by Applicants that such assertions are accurate or that such requirements have been met, and Applicants reserve the right to dispute these assertions/requirements in the future.

If the Examiner believes that the application is not now in condition for allowance, Applicants respectfully request that the Examiner contact the undersigned to discuss any outstanding issues.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper,

including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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